

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SHADOW LAKE	Lake Area (ha):	14.00
Town: WINDHAM	Maximum depth (m):	8.0
County: Rockingham	Mean depth (m):	4.1
River Basin: Merrimack	Volume (m ³):	575000
Latitude: 42°49' N	Relative depth:	2.0
Longitude: 71°14' W	Shore configuration:	1.58
Elevation (ft): 159	Areal water load (m/yr):	9.45
Shore length (m): 2100	Flushing rate (yr ⁻¹):	2.30
Watershed area (ha): 275.3	P retention coeff.:	0.56
% watershed ponded: 0.0	Lake type:	natural w/dam

BIOLOGICAL:

	5 March 1987	27 August 1986
DOM. PHYTOPLANKTON (% TOTAL) #1	TABELLARIA 81%	COELOSPHAERIUM 60%
#2		ASTERIONELLA 15%
#3		OSCILLATORIA 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)		2125.0
CHLOROPHYLL-A (µg/L)		9.41
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLIUS LARVAE 45%	KELLICOTTIA 39%
#2	KERATELLA 30%	NAUPLIUS LARVAE 15%
#3		POLYARTHRA 12%
ROTIFERS/LITER	6	63
MICROCRUSTACEA/LITER	13	22
ZOOPLANKTON ABUNDANCE (#/L)	20	89
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		2.2
BOTTOM DISSOLVED OXYGEN (mg/L)	3.8	0.0
BACTERIA (fecal col., #/100 ml) #1		30
#2		10
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.6
Hypolimnion volume (m³): 49000

CHEMICAL:

Lake: SHADOW LAKE

Town: WINDHAM

	5 March 1987		27 August 1986		
DEPTH (m)	2.5	5.0	2.0	4.5	7.0
pH (units)	6.2	6.3	7.1	6.5	6.7
A.N.C. (Alkalinity)	8.0	9.4	12.6	12.1	29.4
NITRATE & NITRITE NITROGEN	0.17	0.25	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.40	0.40	0.48	0.48	1.08
TOTAL PHOSPHORUS	0.020	0.017	0.018	0.024	0.073
CONDUCTIVITY (μ mhos/cm)	138.5	162.1	151.0	152.0	185.0
APPARENT COLOR (cpu)	65	65	65	65	115
MAGNESIUM			1.25		
CALCIUM			7.5		
SODIUM			16.4		
POTASSIUM			1.90		
CHLORIDE	28	34	33		35
SULFATE	8	8			
TN : TP	29	38	27		15
CALCITE SATURATION INDEX			2.2		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1986

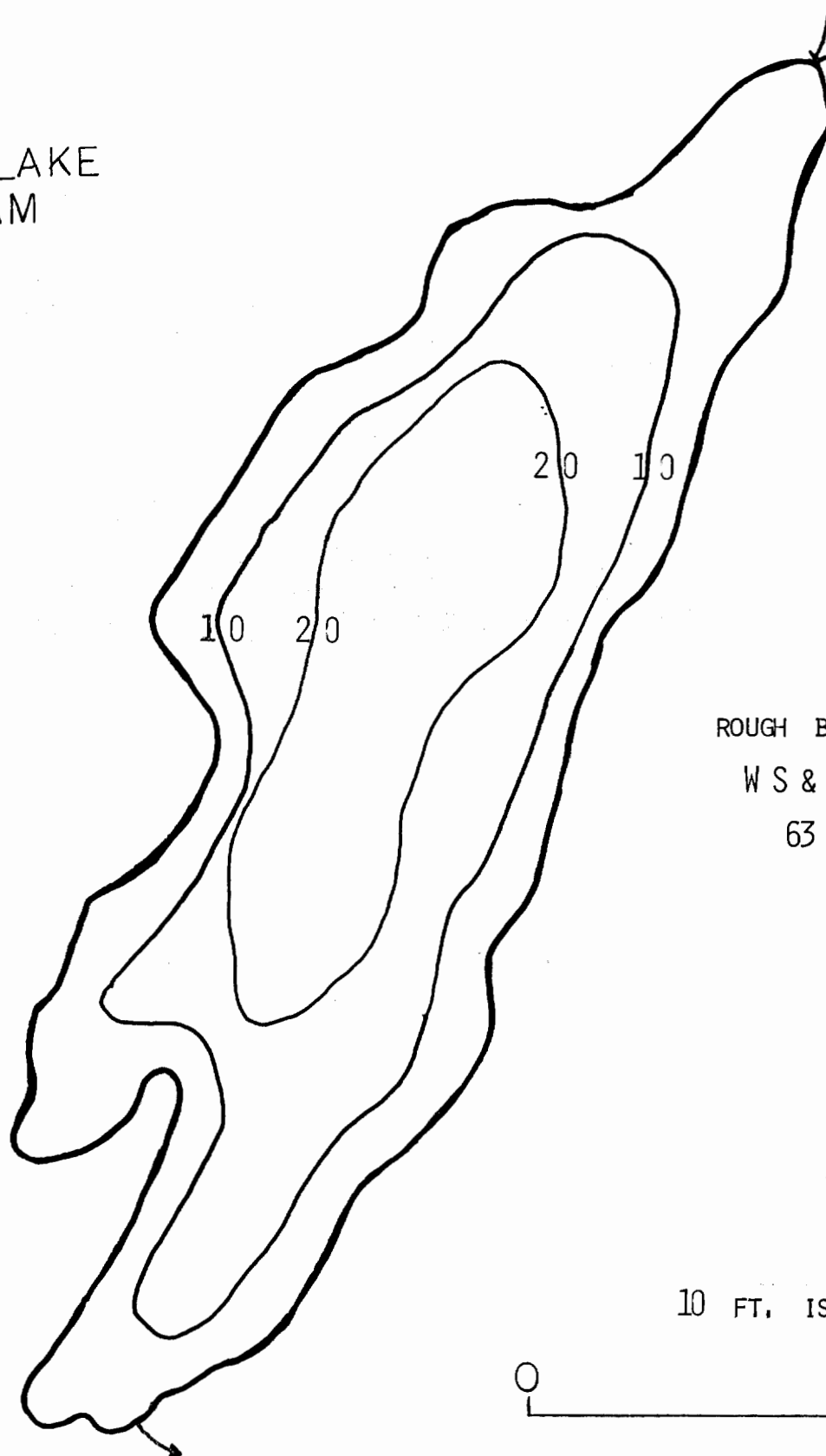
D.O. S.D. PLANT CHL TOTAL CLASS

5	2	1	1	9	Meso.
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COMMENTS:

1. Previously called Hitytity Pond.
2. The whole-water phytoplankton was 85% blue-greens. The dominant genera were Lyngbya (55%), Oscillatoria (15%), and Spirulina (15%).
3. No public access for boats; a small beach was located along Route 111.
4. Cottages were very close together and very close to the water along Rt. 111.
5. Tea colored water.
6. Lake was previously surveyed in 1976. It was not re-sounded in 1986. There was no change in trophic status but chloride and conductivity levels increased 130% and 90% respectively between 1976 and 1986.

SHADOW LAKE
WINDHAM



ROUGH BATHYMETRIC CHART
W S & P C C - 1979
63 SOUNDINGS

10 FT. ISOBATHS

0 ————— .3 KI

FIELD DATA SHEET

LAKE: SHADOW LAKE
DATE: 08/27/86

TOWN: WINDHAM
WEATHER: OVERCAST, COOL, LIGHT BREEZE

[illegible]

SECCHI DISK (m): 2.2

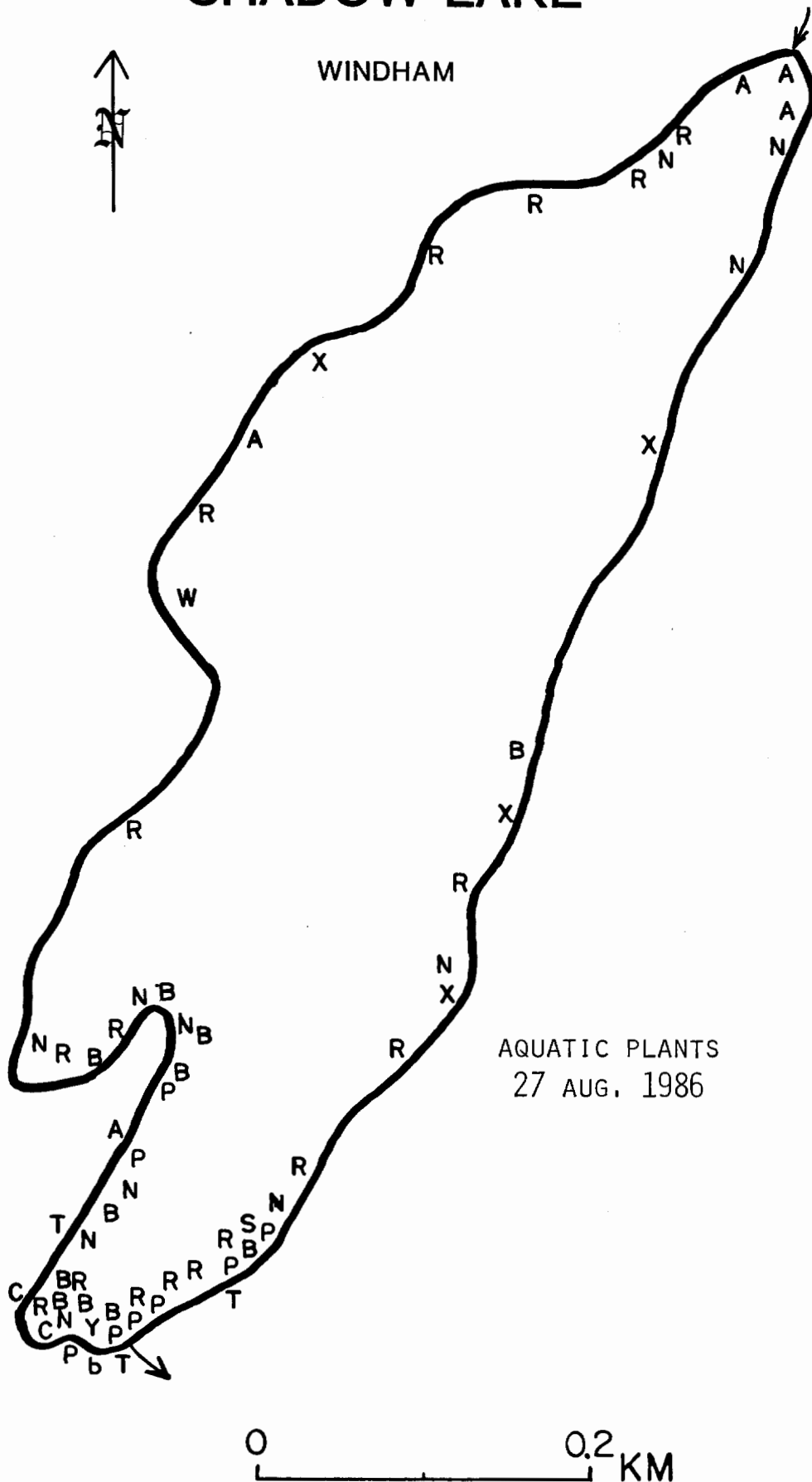
COMMENTS:

BOTTOM DEPTH (m): 8.0

TIME: 1121

*Dissolved oxygen values are in mg/L

SHADOW LAKE



[illegible]